**List of Claims:**

1. (currently amended) A method of improving synthesized speech quality in a speech coding system including an encoder and a decoder, said method comprising:

obtaining an input speech signal by said encoder;

coding said input speech signal by said encoder using a Code Excited Linear Prediction (CELP) coder to generate CELP coding parameters for synthesis of said input speech signal;

generating a plurality CELP speech frames by said encoder, each of said plurality CELP speech frames including said CELP coding parameters;

creating a plurality of voicing indexes by said encoder, wherein each of said plurality of voicing indexes relates to a characteristic of said input speech signal, and wherein each of said plurality of voicing indexes is utilized for a high frequency region of said input speech signal during said coding said input speech signal by said encoder, wherein said high frequency region is defined as being above 5.0 kHz; and

transmitting each of said plurality of voicing indexes as part of each of said plurality of CELP speech frames and in addition to said CELP coding parameters including line spectral frequencies, pitch, fixed codebook gain, adaptive codebook gain and fixed codebook parameters;

wherein each of said plurality of voicing indexes provides information from said encoder to said decoder for controlling one of an adaptive highpass filter, an adaptive perceptual weighting filter, an adaptive Sinc window by said decoder, a spectrum tilt of said input speech signal by short-term enhancement of a fixed-codebook, a perceptual weighting filter, a linear prediction coder, a pitch enhancement fixed-codebook and a post pitch enhancement.

2. (cancelled)

3. (previously presented) The method of claim 1, wherein at least one of said plurality of voicing indexes provides information from said encoder to said decoder for controlling the adaptive highpass filter by said decoder.

4. (previously presented) The method of claim 1, wherein at least one of said plurality of voicing indexes provides information from said encoder to said decoder for controlling the adaptive perceptual weighting filter by said decoder.

5. (previously presented) The method of claim 1, wherein at least one of said plurality of voicing indexes provides information from said encoder to said decoder for controlling the adaptive Sinc window by said decoder.

6. (previously presented) The method of claim 1, wherein said at least one of said plurality of voicing indexes provides information from said encoder to said decoder for controlling the spectrum tilt of said input speech signal by short-term enhancement of a fixed-codebook by said decoder.

7. (previously presented) The method of claim 1, wherein at least one of said plurality of voicing indexes provides information from said encoder to said decoder for controlling the

perceptual weighting filter by said decoder.

8. (previously presented) The method of claim 1, wherein at least one of said plurality of voicing indexes provides information from said encoder to said decoder for controlling the linear prediction coder by said decoder.

9. (previously presented) The method of claim 1, wherein at least one of said plurality of voicing indexes provides information from said encoder to said decoder for controlling a pitch enhancement fixed-codebook by said decoder.

10. (previously presented) The method of claim 1, wherein at least one of said plurality of voicing indexes provides information from said encoder to said decoder for by controlling the post pitch enhancement by said decoder.

11. (previously presented) The method of claim 1, wherein at least one of said plurality of voicing indexes is for use by said decoder to select at least one sub-codebook from a plurality of sub-codebooks.

12. (currently amended) A method of improving synthesized speech quality in a speech coding system including an encoder and a decoder, said method comprising:

receiving a plurality of Code Excited Linear Prediction (CELP) speech frames of an input speech signal by said decoder from said encoder;

obtaining a plurality of CELP coding parameters by decoding each of said plurality of CELP speech frames by said decoder;

obtaining a plurality of voicing indexes in addition to said plurality of CELP coding parameters including line spectral frequencies, pitch, fixed codebook gain, adaptive codebook gain and fixed codebook parameters, by decoding each of said plurality of CELP speech frames by said decoder, wherein each of said plurality of voicing indexes relates to a characteristic of said input speech signal, and wherein each of said plurality of voicing indexes is utilized for a high frequency region of said input speech signal during said decoding said input speech signal by said decoder, wherein said high frequency region is defined as being above 5.0 kHz; and

generating said synthesized version of said input speech signal using said plurality of CELP coding parameters and said plurality of voicing indexes by said decoder;

wherein each of said plurality of voicing indexes provides information from said encoder to said decoder for controlling one of an adaptive highpass filter, an adaptive perceptual weighting filter, an adaptive Sinc window by said decoder, a spectrum tilt of said input speech signal by short-term enhancement of a fixed-codebook, a perceptual weighting filter, a linear prediction coder, a pitch enhancement fixed-codebook and a post pitch enhancement.

13. (cancelled)

14. (previously presented) The method of claim 12, wherein at least one of said plurality of voicing indexes provides information from said encoder to said decoder for controlling the adaptive highpass filter by said decoder.

15. (previously presented) The method of claim 12, wherein at least one of said plurality of voicing indexes provides information from said encoder to said decoder for controlling the adaptive perceptual weighting filter by said decoder.

16. (previously presented) The method of claim 12, wherein at least one of said plurality of voicing indexes provides information from said encoder to said decoder for controlling the adaptive Sinc window for pitch contribution by said decoder.

17. (previously presented) The method of claim 12, wherein at least one of said plurality of voicing indexes provides information from said encoder to said decoder for controlling the spectrum tilt of said input speech signal by short-term enhancement of a fixed-codebook by said decoder.

18. (previously presented) The method of claim 12, wherein at least one of said plurality of voicing indexes provides information from said encoder to said decoder for controlling the linear prediction coder filter by said decoder.

19. (previously presented) The method of claim 12, wherein at least one of said plurality of voicing indexes provides information from said encoder to said decoder for controlling the pitch enhancement fixed-codebook by said decoder.

20. (previously presented) The method of claim 12, wherein at least one of said plurality of voicing indexes provides information from said encoder to said decoder for controlling the post pitch enhancement by said decoder.

21. (previously presented) The method of claim 12, wherein said decoder uses at least of said plurality of said voicing indexes selects at least one sub-codebook from a plurality of sub-codebooks.

22. (currently amended) An encoder for improving synthesized speech quality of an input speech signal, said encoder comprising:

a receiver configured to receive said input speech signal by said encoder;

a transmitter;

a Code Excited Linear Prediction (CELP) coder configured to:

generate CELP coding parameters for synthesis of said input speech signal,

generate a plurality CELP speech frames, each of said plurality CELP speech frames including said CELP coding parameters,

create a plurality of voicing indexes, wherein each of said plurality of voicing indexes relates to a characteristic of said input speech signal, and wherein each of said plurality of voicing indexes is utilized for a high frequency region of said input speech signal during said coding said input speech signal by said encoder, wherein said high frequency region is

defined as being above 5.0 kHz;

said transmitter is configured to transmit each of said plurality of voicing indexes as part of each of said plurality of CELP speech frames and in addition to said CELP coding parameters including line spectral frequencies, pitch, fixed codebook gain, adaptive codebook gain and fixed codebook parameters;

wherein each of said plurality of voicing indexes provides information from said encoder to a decoder for controlling one of an adaptive highpass filter, an adaptive perceptual weighting filter, an adaptive Sinc window by said decoder, a spectrum tilt of said input speech signal by short-term enhancement of a fixed-codebook, a perceptual weighting filter, a linear prediction coder, a pitch enhancement fixed-codebook and a post pitch enhancement.

23. (cancelled)

24. (previously presented) The encoder of claim 22, wherein at least one of said plurality of voicing indexes provides information from said encoder to said decoder for controlling the adaptive highpass filter by said decoder.

25. (previously presented) The encoder of claim 22, wherein at least one of said plurality of voicing indexes provides information from said encoder to said decoder for controlling the adaptive perceptual weighting filter by said decoder.

26. (previously presented) The encoder of claim 22, wherein at least one of said plurality

of voicing indexes provides information from said encoder to said decoder for controlling the adaptive Sinc window by said decoder.

27. (previously presented) The encoder of claim 22, wherein at least one of said plurality of voicing indexes is for use by said decoder to selects at least one sub-codebook from a plurality of sub-codebooks.

28. (currently amended) A decoder for improving synthesized speech quality of an input speech signal, said method comprising:

a receiver configured to receive a plurality of Code Excited Linear Prediction (CELP) speech frames from an encoder based on said input speech signal,

wherein said decoder is configured to:

obtain a plurality of CELP coding parameters by decoding each of said plurality of CELP speech frames,

obtain a plurality of voicing indexes, in addition to said plurality of CELP coding parameters including line spectral frequencies, pitch, fixed codebook gain, adaptive codebook gain and fixed codebook parameters, by decoding each of said plurality of CELP speech frames, wherein each of said plurality of voicing indexes relates to a characteristic of said input speech signal, wherein said decoder is configured to generate said synthesized version of said input speech signal using said plurality of CELP coding parameters and said plurality of voicing indexes, and wherein each of said plurality of voicing indexes is utilized for a high

frequency region of said input speech signal during said decoding said input speech signal by said decoder, wherein said high frequency region is defined as being above 5.0 kHz;

wherein each of said plurality of voicing indexes provides information from said encoder to said decoder for controlling one of an adaptive highpass filter, an adaptive perceptual weighting filter, an adaptive Sinc window by said decoder, a spectrum tilt of said input speech signal by short-term enhancement of a fixed-codebook, a perceptual weighting filter, a linear prediction coder, a pitch enhancement fixed-codebook and a post pitch enhancement.

29. (cancelled)

30. (previously presented) The decoder of claim 28, wherein at least one of said plurality of voicing indexes provides information from said encoder to said decoder for controlling the adaptive highpass filter by said decoder.

31. (previously presented) The decoder of claim 28, wherein at least one of said plurality of voicing indexes provides information from said encoder to said decoder for controlling the adaptive perceptual weighting filter by said decoder.

32. (previously presented) The decoder of claim 28, wherein at least one of said plurality of voicing indexes provides information from said encoder to said decoder for controlling the adaptive Sinc window for pitch contribution by said decoder.

33. (previously presented) The decoder of claim 28, wherein said decoder uses at least of said plurality of said voicing indexes selects at least one sub-codebook from a plurality of sub-codebooks.

34. (currently amended) The method of claim 1, wherein each of said plurality of voicing indexes has a plurality of bits specifically designating [[said]] a classification of each frame of said plurality of CELP speech frames.

35. (original) The method of claim 34, wherein said plurality of bits are three bits.

36. (original) The method of claim 34, wherein said classification is indicative of periodicity of said input speech signal.

37. (currently amended) The method of claim 12, wherein each of said plurality of voicing indexes has a plurality of bits specifically designating [[said]] a classification of each frame of said plurality of CELP speech frames.

38. (previously presented) The method of claim 37, wherein said plurality of bits are three bits.

39. (previously presented) The method of claim 37, wherein said classification is

indicative of periodicity of said input speech signal.

40. (currently amended) The encoder of claim 22, wherein each of said plurality of voicing indexes has a plurality of bits specifically designating [[said]] a classification of each frame of said plurality of CELP speech frames.

41. (previously presented) The encoder of claim 40, wherein said plurality of bits are three bits.

42. (previously presented) The encoder of claim 40, wherein said classification is indicative of a noisy speech signal.

43. (currently amended) The decoder of claim 28, wherein each of said plurality of voicing indexes has a plurality of bits specifically designating [[said]] a classification of each frame of said plurality of CELP speech frames.

44. (previously presented) The decoder of claim 40, wherein said classification is indicative of a periodic index.

45. (previously presented) The decoder of claim 40, wherein said periodic index ranges from a low periodic index to a high periodic index.

46. (previously presented) The method of claim 1, wherein said plurality of voicing indexes are used in place of pitch gain for post pitch enhancement.

47. (previously presented) The method of claim 5, wherein said plurality of voicing indexes are used to control a modification to a low pass filter for said Sinc window.

48. (previously presented) The method of claim 1, wherein each of said plurality of voicing indexes is derived from a normalized pitch correlation parameter Rp, where $-1.0 < Rp < 1.0$.

49. (previously presented) The method of claim 12, wherein each of said plurality of voicing indexes is derived from a normalized pitch correlation parameter Rp, where $-1.0 < Rp < 1.0$.

50. (previously presented) The method of claim 1, wherein at least one of said plurality of voicing indexes provides information from said encoder to said decoder for a bi-directional pitch enhancement.